

Remarks

With the filing of the Request for Continued Examination herewith, we withdraw the appeal of the present application.

We amended claim 48 to clarify the subject matter of the invention. In particular, we have specified that the outer surface of the motor vehicle component is exposed to a flow of ambient air (support found on page 9, lines 25 and 26 of the specification). The description of the carbon overcoat has been simplified by using the term “porous,” which is defined on page 8, lines 19-23 of the specification.

Claim 54 has been canceled.

Turning to the merits of the invention, Applicants have discovered and claimed a unique device for treating the atmosphere. The device utilizes a catalyzed outer surface of a motor vehicle component to convert atmospheric pollutants to less harmful materials. Importantly, a porous yet protective layer of carbon overcoats the catalyst. The porous carbon overcoat deflects or adsorbs *catalyst-degrading contaminants* while still allowing the *atmospheric pollutants* to be converted to benign substances by the catalyst to contact the catalyst, thereby improving catalyst performance (see the specification on page 3, line 27 to page 4, line 6; page 8, lines 23-30, and elsewhere).

We respectfully submit that the claims 48, 53-54 and 56-58 define an invention that is non-obvious over Patil et al. (U.S. Pat. No. 5,125,231, hereinafter “Patil”) in view of Abe et al. (U.S. Patent No. 5,538,697, hereinafter “Abe”) and, for claims 49-52 and 55, further in view of WO 98/02235 (hereinafter “Hoke”) and U.S. Pat. No. 6,190,627 (hereinafter “Hoke II”). The primary reference Patil and the secondary reference Abe, which disclose catalytic converter systems, fail to teach or suggest a device that utilizes the outer surface of a motor vehicle component which is exposed to a flow of ambient air as required in the amended claims.

“Ambient air” has a specialized meaning in the present application: it is the “portion of the atmosphere that is drawn or forced towards the outer surface of the coated substrate” (see page 5,

lines 12-13 of the specification). The specification on page 5, lines 10-11 defines “atmosphere” as “the mass of air surrounding the earth.”

As noted in the outstanding Office action, the Patil/Abe devices are catalytic converter devices in which ambient air from the atmosphere “enters the engine, is *converted to exhaust* and then passes through a catalytic converter” (page 7, lines 17-18, emphasis added). Neither Patil, Abe, nor any hypothetical combination of the references teaches or suggests a catalyzed surface exposed to flow of *ambient* air as defined in the present specification and amended claims – a basic and meaningful distinction. The “ambient air” vs. “combustion exhaust” distinction is highlighted by the different purposes for the Patil/Abe adsorbent layer and the presently claimed porous carbon overcoat. The purpose of the Patil/Abe adsorbents, exclusively or preferably zeolites, is retention of hydrocarbons during start up. The concentration of hydrocarbons is especially high in exhaust during start up – see column 1, lines 42-45 of Patil. The Patil/Abe adsorbents retain the hydrocarbons until the catalysts attain the ignition temperature required to destroy the same, upon which the hydrocarbons are desorbed to the catalyst for destruction (see, e.g., column 2, lines 31-50 of Patil; and column 3, lines 5-42 of Abe).

As mentioned above, the purpose of the porous carbon overcoat required in the present invention is to deflect or permanently trap materials in ambient air that can poison the underlying catalyst. Unlike the adsorbents in the Patil/Abe devices, which are designed to desorb hydrocarbons when the catalysts reach ignition or “light off” temperature (temp. required to convert 50% of the hydrocarbons – see column 1, lines 38-41 of Patil), the carbon overcoat required in the present invention protects the underlying catalyst by adsorbing or deflecting catalyst contaminants. Desorption of the contaminants by the protective carbon overcoat is not desired in the present invention, as any desorbed contaminants could poison the underlying catalyst (see the specification on page 3, line 27 to page 4, line 6; page 8, lines 23-30, and elsewhere).

Accordingly, we respectfully submit that one of ordinary skill in the art would have no incentive to utilize the exhaust-treating adsorbent/catalyst combination taught in Patil/Abe for use on surfaces exposed to ambient air flow. As ambient air contains a negligible concentration of hydrocarbons compared to exhaust, the problem addressed by the Patil/Abe catalytic converters does not exist for Applicants’ claimed device (which is exposed to ambient air flow). There is no

suggestion in Patil or Abe that catalyst-poisoning contaminants are a problem, let alone that a protective carbon overcoat could alleviate the problem. Moreover, one of ordinary skill in the art would have to ignore the exclusive use of zeolite adsorbents in Patil, and the preferred use of zeolite adsorbents in Abe (column 8, lines 54-58), in order to arrive at Applicants' claimed invention.

We respectfully submit that the claims 48-54 and 56-58 are non-obvious over Hoke in view of Patil and Abe and, for claim 55, further in view of Hoke II. The Office action indicates that "[i]t would have been obvious to one having ordinary skill in the art to provide an overcoat of adsorbent material in the surface of the catalyst material as taught by Patil et al in the apparatus of WO 98/02235 [Hoke II] *so as to enhance the purification of the system during start up of the engine*" (page 5, lines 9-12, emphasis added). As discussed above, such incentive exists only when exhaust is being treated. For surfaces exposed to ambient air, as required in the amended claims, no such incentive exists.

In light of the foregoing, we respectfully submit that the claims, as amended, define a novel and non-obvious invention that fully merits patent protection. We therefore respectfully request that the entire application be allowed at an early date.

This response is being filed after three months but before four months after the Notice of Appeal filed on March 8, 2004. Authorization to charge the fee required for a two-month extension for response, as well as any other fee deemed to be required, to deposit Account No. 05-1070 is hereby granted.

Respectfully submitted,



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